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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,727	04/13/2004	Raulf M. Polichar	000479.00116	2863

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EXAMINER

GAGLIARDI, ALBERT J

ART UNIT	PAPER NUMBER
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2884

DATE MAILED: 07/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/822,727	Applicant(s) POLICHAR ET AL.	
	Examiner Albert J. Gagliardi	Art Unit 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 1304 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Comment on Submissions***

1. This Office Action is responsive to the Amendment and Remarks filed on 22 June 2006.

### ***Information Disclosure Statement***

2. Applicant's argument that some of the non-complying references not considered by the examiner should have been considered because the required "date" for a publication listed on an IDS does not have to be the "date" of publication but can be some other "date," has been considered, but is not persuasive. It is well understood that the term "date" when used in relation to a publication the "date of publication." Such view is clearly supported by the MPEP at § 609.04(a) I. The examiner further note that the requirement for a "date" serves at least to purposes: (1) to help identify a document and distinguish it from related or revised documents that may have been published on a different date, and (2) to allow the examiner to assess whether or not the disclosed information is available as a "prior art publication" and if so, under what statute. Neither purpose would be served if the required date were any date other than a publication date.

Since the references are not considered as meeting the minimum requirements of CFR 1.98, they will not be considered.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-6 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Craig et al.* (US 6,580,079) in view of *Odom et al.* (US 6,495, 837 B2).

Regarding claim 1, *Craig* discloses (Fig. 4) a broad spectrum neutron detector comprising a thermal neutron sensitive scintillator film (sheet) (400; col. 6, lines 4-5) interleaved with a hydrogenous thermalizing media (410; col. 6, lines 9-13).

Regarding the hydrogenous media functioning as a light guide, *Odom* discloses a neutron detector including a scintillator film (302) interleaved with a hydrogenous light guide (304). *Odom* teaches that the use of a transparent hydrogenous material allows for the material to also be used as a light guide thereby increasing detector efficiency (col. 7, lines 41-47). Therefore it would have been obvious to a person of ordinary skill in the art to utilize the thermalizing media as a light guide to improve detection efficiency.

Regarding claim 3, *Odom* discloses that the media comprises acrylic (col. 9, lines 28-31).

Regarding claims 4-5, absent some degree of criticality, the particular thickness of the thermal neutron sensitive scintillator film and the thermalizing media layer are considered a matter of routine design choice depending on the needs of the application including such factors relating to detector geometry and the desired to optimize the thickness of the films to achieve high detection efficiency.

Regarding claim 6, *Odom* further discloses a photosensor (col. 5, line 67).

Regarding claims 8-9, the configuration of radiation detectors as portal detectors or handheld detectors is well known and, absent some degree of criticality, the particular

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configuration and use of the detector would have been an obvious design choice depending on the needs of the application.

5. Claims 2, 10-14, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Craig* and *Odom* as applied above, and further in view of *Grodzins* (US 2005/0023479 A1).

Regarding claim 2, although *Odom* does not specifically identify the material comprising the scintillator as comprising  $^6\text{Li-ZnS}$  *Grodzins* discloses (Figs. 3, 4 and 7) that thermal neutron sensitive scintillator comprising a material such as  $^6\text{Li-ZnS}$  (specifically  $^6\text{LiF-ZnS}$ ) are known in the art for the functionally equivalent purpose of detecting thermal neutrons [0030]. Therefore, absent some degree of criticality, a specific choice of a  $^6\text{Li-ZnS}$  material is viewed as an obvious design choice in view of the known use of such material for the purpose of detecting thermal neutrons.

Regarding claims 10-14, 16-17, the apparatus as recited according to claims 10-14 is suggested by the apparatus suggested by *Craig*, *Odom* and *Grodzins* as applied above, and is rejected accordingly. The examiner notes that while the particular numbers of layers is viewed as a matter of routine design choice depending on the needs of the application.

Regarding claims 18-20, the apparatus as recited according to claims 18-20 is suggested by the apparatus suggested by *Craig*, *Odom* and *Grodzins* as applied above, and is rejected accordingly. The examiner notes that while *Craig*, *Odom* and *Grodzins* does not specifically recite the use of a reflecting surface enveloping the interleaved layers and being tapered for guiding light to the photosensor, those skilled in the art appreciate that the use of reflecting materials and tapered light concentrators are well known for use in conjunction with scintillators and light guides so as to allow for efficient collection of light with minimal loss, and absent some

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degree of criticality, the use of such would have been a matter of routine design choice within the skill of a person of ordinary skill in the art.

6. Claims 7 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Craig* and *Odom* as applied above, and further in view of Koechner (US 4,942,302).

Regarding claims 7 and 15, although *Craig* and *Odom* do not disclose a wavelength shifter, those skilled in the art appreciate that it is well known in the art to employ wavelength shifters in conjunction with scintillators to allow for better matching of the output of the scintillator to the photosensor (see for example *Koechner* at col. 4, lines 18-21).

#### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert J. Gagliardi whose telephone number is (571) 272-2436. The examiner can normally be reached on Monday thru Friday from 10 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David P. Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

11. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Albert J. Gagliardi  
Primary Examiner  
Art Unit 2884

AJG